

## **Greece: Selected Issues**

This Selected Issues paper for Greece was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on July 2, 2009. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Greece or the Executive Board of the IMF.

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**International Monetary Fund**  
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INTERNATIONAL MONETARY FUND

GREECE

**Selected Issues**

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Approved by the European Department

July 2, 2009

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## I. UPDATES ON GREECE'S FINANCIAL STABILITY FRAMEWORK<sup>1</sup>

*The Bank of Greece (BoG) has strengthened the financial stability framework over recent years. This chapter summarizes improvements in two areas of particular interest in the current conjuncture: (1) the safety net framework; and (2) cross-border coordination.*

### A. Safety Net Framework

**1. The safety net system provides a large degree of flexibility.** It comprises three pillars: the liquidity and lender of last resort facilities, a crisis management and bank resolution framework, and a deposit insurance scheme.

#### Liquidity and lender of last resort facilities

**2. In addition to the liquidity provided by the Eurosystem through its regular refinancing operations and standing facilities, the BoG can provide emergency liquidity assistance (ELA) to financial institutions.**<sup>2</sup> In accordance with the rules set by the ECB Governing Council, the general council of the BoG can decide to grant ELA to credit institutions on the recommendation of the Banking and Credit Committee. Banks need to provide adequate collateral. The BoG can authorize a broader range of collateral than that used for standard monetary operations—in theory any asset, including loans.

**3. In response to the global financial crisis, the authorities have assisted bank capital and funding.** A €28 billion package was introduced in November 2008, providing up to €5 billion in capital in the form of 5-year preference shares, and up to €23 billion in loanable funds. The facilities will be active until end-2009. The liquidity component includes: (1) state guarantees for up to €15 billion of new loans with a maturity up to 3 years against the payment of a commission (with or without collateral); and (2) lending to banks of special zero-coupon bonds of the Greek state

Table 1. Eligible Collateral for the Bank Support Package

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1. Collateral accepted in in the Eurosystem.
2. Greek state notes expressed in foreign currency.
3. Performing loans to private non-financial corporations with rating Moody's: Aaa-Ba3 Fitch: AAA-BB S&P: AAA-BB ICAP AE: AA-C.
4. Performing business loans guaranteed by the Greek State or legal entity with rating as in (3).
5. Performing loans to shipping companies satisfying the criteria to be assigned to categories 1 (strong) and 2 (good) according to the Act of the Governor of the BoG 2589/2007.
6. Performing loans to individuals against collateral (mortgage or prenotation of properties) with a LTV lower than 95 percent.
7. Any business loan which, at the BoG's discretion, corresponds to the rating characteristics of the categories above.

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Source: Ministry of Finance.

<sup>1</sup> Prepared by Marialuz Moreno Badia.

<sup>2</sup> Within the Eurosystem, in addition to regular open market operations, there are two standing facilities, implemented in a decentralized manner by the national central banks (NCBs), available to eligible counterparties on their own initiative: (1) the marginal lending facility to obtain overnight liquidity from the NCBs against eligible collateral; and (2) the deposit facility to make overnight deposits with the NCBs.

up to €8 billion and a total duration of up to 3 years, against the payment of a fee and sufficient collateral (Table 1). The BoG administers the collateral pledged to the state in the context of these measures.

### **Crisis management and bank resolution framework**

4. **A Financial Stability Committee (FSC) was established in 2008, replacing the Crisis Management Committee.** In addition to serving as the crisis management team, the new committee holds regular meetings to monitor financial stability. Members of the Committee are the governor, the two deputy governors, a member of the Monetary Policy Council, a governor's consultant, and four directors of the BoG.

5. **A manual has been developed to monitor financial stability and spell out contingency plans for the management of crises** (Box 1). The FSC is also implementing internal procedures for identifying signs of deterioration and providing timely information for the management of crises. In line with the provisions of the Multilateral MoU of June 2008<sup>3</sup> and ECB guidelines, particular attention has been paid to the assessment of the systemic implications of a crisis (heat map). An exercise was carried out in September 2008 in order to identify issues of interdepartmental cooperation and data availability.

6. **Bankruptcy procedures have been reformed.** A new Bankruptcy Code was introduced in 2007 stipulating the bankruptcy and receivership arrangements for all legal persons which pursue an economic purpose, including banks. It aims at: (1) maximizing creditors' assets; (2) balancing the settlement of outstanding payments and the reorganization of the creditor's business; (3) equal treatment of equal creditors; (4) prompt and effective procedures and follow-up; and (5) preventing bankruptcy and premature dismantling of creditors' assets. The BoG is the competent authority to decide on winding up proceedings in case of a credit institution's authorization withdrawal.

### **Deposit insurance scheme**

7. **The coverage for deposits has been increased.** In November 2008 the maximum coverage was increased to €100,000 per person per bank aimed at improving depositor

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<sup>3</sup> Multilateral MoU on cooperation between the Financial Supervisory Authorities, Central Banks, and Finance Ministries of the European Union on Cross Border Financial Crisis Situations.

### Box 1. Crisis Management Procedure

The governor of the BoG convokes the FSC: (1) when the parameters used for crisis prevention exceed defined limits; or (2) when it is deemed necessary to assess the situation and examine the possibility it may evolve into a crisis. Departments collect additional information to evaluate the situation and assess the implications of the crisis. This information is conveyed to any authority that is expected to take part in the resolution of the crisis. Two different approaches are followed depending on whether the crisis is of a domestic or a cross-border nature.

1. *Domestic crisis.* The FSC makes proposals on measures for the resolution of the crisis (with the lowest possible cost) to the competent decision-making organs.

- **Liquidity.** In case of liquidity shortages, the Committee decides on measures and whether the appointment of a commissioner is necessary. To the extent that liquidity can no longer be drawn from the Eurosystem owing to the lack of eligible collateral, ELA may be provided at a penalty rate in accordance with the ECB Governing Council rules (e.g., prior approval or ex-post information depending on the amount).
- **Solvency.** To address capital problems the first approach is to look for a market solution. If the crisis is of a systemic nature the National Financial Stability Committee<sup>1/</sup> is activated and communication with the Ministry of Finance and other sectoral supervisors is established. If the crisis concerns only one institution without systemic implications its resolution is the sole responsibility of the BoG.

2. *Cross-border crisis.* In case of a crisis in a banking group with cross border presence, the authority responsible for consolidated supervision—which acts as a coordinator—is informed. If BoG is recognized as coordinator, the governor of BoG takes initiatives to contain the implications of the crisis in cooperation, if provided for, with other competent authorities and market participants. During a general liquidity crisis, the ECB may contribute to an orderly functioning of the money market through its liquidity operations, based on operational procedures agreed at the Eurosystem level. Furthermore, the BoG may provide—temporarily and against collateral—ELA to illiquid but solvent institutions.

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1/ The National Financial Stability Committee comprises the Ministry of Finance and the three supervisory authorities of Greece (i.e. Bank of Greece, Private Insurance Supervisory Committee, and the Capital Markets Commission).

protection and maintaining confidence in the financial safety net.<sup>4</sup> By the same legal provision, the banks' contributions to the Deposit Guarantee Fund were raised to ensure its financial soundness. Although the payout period is still long (three months with the possibility of an extension up to nine months in total), a draft law—transposing Directive 2009/14/EU—will be submitted to Parliament shortly reducing the payout period to twenty

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<sup>4</sup> In February 2009, the protection provided by the Deposit Guarantee Fund (DGF) to bank customers was extended to claims generated by the provision of investment services. In particular, until the adoption of this law, only banks which were members of the Athens Stock Exchange were obliged to participate in an investor insurance scheme. This extension of the coverage is in line with the provisions of Law 3606/2007 (implementing Directive 2004/39/EC), which stipulated that in order for banks and investment firms to provide investment services they should participate in an investor's scheme. The investor protection scheme will cover up to the amount of €30,000 per investor.

days with an extension for ten more working days under exceptional circumstances.<sup>5</sup> The draft law also reduces the period needed from the competent authorities to decide on triggering the deposit guarantee scheme from 21 days to 5 working days.

8. **Information on deposits has improved.** The banks have developed new customer-oriented systems that allow them to provide the DGF with immediate information about the amount of insured deposits.

## **B. Cross-Border Coordination**

9. **The BoG has a long standing tradition of close cooperation with counterparts in Southeastern Europe (SEE).** At the early stages of Greek banks' expansion into SEE, and because none of the SEE countries was an EU member, there was a need to establish a framework for the cooperation among supervisory authorities. In this context, the BoG signed bilateral MoUs with the supervisory authorities of Albania (1999), Serbia (2002), Bulgaria (2002), Romania (2003), Cyprus (2004), and Turkey (2005) that set the basic elements of home-host supervision responsibilities. In addition, a MoU, in the form of letters' exchange, was completed with the Central Bank of FYROM. These MoUs were based on the guidelines and practices introduced by the Basel Committee on Banking Supervision. The main purpose of these agreements was to facilitate supervision on an ongoing basis and to allow cross-border on-site examinations.

10. **BoG has recently taken a series of initiatives to further enhance this cooperation:**

- **SEE Multilateral MoU.** In 2007, on the initiative of the BoG, a multilateral MoU was signed between the Central Banks of Albania, Serbia, FYROM, Bulgaria, Romania, Cyprus and Greece for the cooperation in the field of banking supervision. In 2008, the authorities of Bosnia Herzegovina and Montenegro also joined the MoU. The aim of this MoU is to enhance the effectiveness of supervision of the large banking groups operating in the region and promote convergence of supervisory practices. The MoU covers, among others, issues related to information exchange, model validation, and cooperation of the parties involved in the management of crises with cross border implications. Once or twice a year, a member country hosts a Governors and Heads of Banking Supervision meeting that tackles specific issues within the MoU. This new framework has contributed to setting up communication networks among the authorities and to establishing working groups to explore the potential for the convergence of practices. A sub-working group on stress testing has also been established. The outcome of this sub-working group will be the creation of stress scenarios designed by each local authority and the performance of a stress testing exercise for whole banking groups including subsidiaries.

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<sup>5</sup> Under this law, the deposit guarantee schemes should perform regular tests of their systems and, if appropriate, they are informed in the event that the competent authorities detect problems in a credit institution that are likely to trigger deposit-guarantee schemes.



- **Joint inspections.** Local authorities have participated in the on-site controls performed by BoG in SEE. With or without the active participation of host supervisors in the on-site inspections, BoG has a continuous consultation and exchange of information with the local supervisory authority and extensive exchange of views on the outcome of the reviews.
- **Bilateral meetings with other central banks and supervisors.** In order to address the impact from the recent crisis in a more effective manner, the governor of the BoG has initiated bilateral meetings with the governors of the national central banks and the heads of banking supervision in SEE. Top executives of Greek banking groups with presence in the specific country are invited separately in order to exchange views on the performance of the group as a whole and the specific subsidiary. The purpose of these meetings is to assess the macroeconomic environment of the region and its implications on financial stability and the performance of Greek banking groups. The results of the stress tests carried out by national authorities were also discussed to assess the resilience of Greek banks' subsidiaries and to agree on measures to strengthen the banks' position. In addition there was an exchange of information about the measures taken by supervisory authorities and the banks' policies to address the financial crisis (e.g. new business plans, focus on deposits, etc).
- **Vienna banking cooperation initiative.** BoG has initiated meetings with the heads of Greek commercial banks to present the objectives of the Vienna Initiative and to encourage the Greek banks to maintain the current level of funding from parent institutions and credit exposures, and to inject capital into subsidiaries if necessary.
- **Supervisory colleges.** On March 6, 2009, BoG hosted a supervisory college with the participation of all host supervisors who are responsible for the supervision of the subsidiaries and/or branches of the National Bank of Greece (NBG) group. Although colleges have been developed for the cooperation of EU member states, third countries were invited as well. Another two colleges (one for Alpha Bank and one for EFG Eurobank Ergasias Bank) will be established by end-2009.

## II. A FISCAL EARLY WARNING SYSTEM BASED ON THE COMPREHENSIVE PUBLIC SECTOR BALANCE SHEET<sup>6</sup>

11. **What is the comprehensive public sector balance sheet?** It is an economic tool that gauges the government’s net worth not only from assets and liabilities incurred from past events and policies—the traditional “accounting balance sheet”—but also by considering the baseline (dynamic) effects of current fiscal policies on future assets and liabilities. While accounting balance sheets are backward looking, a comprehensive balance sheet is a continuous thermometer of fiscal health that includes results from actions in the past *as well as* projected consequences of baseline policies in the future.

12. **This tool can provide early warning signs of fiscal (un)sustainability.** For example, in the context of population aging, traditional backward looking balance sheets and deficit and debt indicators might not signal a problem. However, the comprehensive public sector net worth could become negative if aging causes large increases in future public expenditures and if current policies are not calibrated to generate enough resources to meet obligations from the past as well as those projected for the future. As a result, actions would need to be taken to strengthen policies to bring total assets at least in line with total intertemporal liabilities, or market forces will eventually emerge to reduce liabilities in line with existing and prospective assets. Since fiscal adjustment is difficult and requires time, including for consultation with the public, there is great value in having information on intertemporal fiscal consistency well in advance—an early warning system.

13. **The comprehensive public sector balance sheet can help to communicate policy needs to the general public.** There are sophisticated models that have had a limited impact on the general public so far, perhaps because they tend to be complex.<sup>7</sup> Rather, the comprehensive public sector balance sheet is a relatively intuitive concept, which can be used as a communication device with the public about the need to strengthen policies.

14. **Constructing a comprehensive public sector balance sheet requires two steps.** First, we need a traditional backward-looking accounting balance sheet. Second, we then introduce the projected outcomes for the balance sheet of policies in the future. The latter involves constructing a baseline macroeconomic and fiscal scenario, which asks the question: *based on current fiscal and structural policies*, how many more assets and liabilities will the government likely generate in the future? Let us take each part step-by-step.

### A. The Traditional Balance Sheet

15. **First, the backward-looking (traditional) public sector balance sheet for Greece is constructed using three main components** (Table 1):

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<sup>6</sup> Prepared by Bob Traa.

<sup>7</sup> Including intergenerational accounting systems and stochastic computable general equilibrium models.

**Table 1. Greece: Public Sector Balance Sheet**

	2005	2006	2007	2008 Staff Est.
	(In € billions)			
Financial assets	56.8	63.3	76.1	72.1
Currency	8.4	9.7	11.9	12.7
Securities	0.1	0.2	0.5	0.5
Loans	0.7	0.7	0.8	0.8
Shares	33.6	34.4	42.0	35.8
Insurance reserves	0.0	0.0	0.0	0.0
Other	13.9	18.3	20.9	22.3
Financial liabilities	217.2	219.6	235.4	249.2
Currency	1.2	1.0	0.7	0.7
Securities	190.1	192.7	210.1	222.3
Loans	22.3	21.8	19.7	21.0
Other	3.5	4.0	4.9	5.2
Net capital stock	100.8	108.7	116.4	123.9
<b>Net worth</b>	<b>-59.6</b>	<b>-47.5</b>	<b>-42.9</b>	<b>-53.2</b>
	(In percent of GDP)			
Financial assets	28.7	29.7	33.4	29.7
Financial liabilities	109.9	103.0	103.2	102.6
Net capital stock	51.0	51.0	51.0	51.0
<b>Net worth</b>	<b>-30.2</b>	<b>-22.3</b>	<b>-18.8</b>	<b>-21.9</b>
Memorandum item:				
Nominal GDP (€ bil.)	197.6	213.2	228.2	242.9

Sources: Eurostat; and IMF staff calculations.

- **Public sector financial assets**, on which statistics are provided by the Greek government, are broken down by holdings of currency, securities, loans, shares, government insurance reserves, and “other” financial claims. Such financial assets for 2008 are estimated at €72 billion (29.7 percent of GDP).
- **Public sector financial liabilities**, which are also available from the Greek government, comprise the debt as defined under the Maastricht criterion of the EU Stability and Growth Pact (SGP), and some other liabilities of public enterprises and others. In total these involve currency liabilities, securities issued, loans obtained, and “other” liabilities. The government liabilities in 2008 are estimated to amount to €249 billion (102.6 percent of GDP).
- **Public sector net capital stock**, which is the most important nonfinancial asset, is the sum of all buildings, highways, infrastructure, land, etc. that has been acquired by the public sector over the years to assist society and the economy. Since capital stock

<sup>8</sup> As a

shortcut, we assume that the government will maintain this value of the net capital stock over time to reach €123.9 billion at end-2008.

16. **Greece’s traditional public sector balance sheet indicates negative net worth of €–53 billion at end-2008.** This is not good because the government has small *negative* net reserves to meet contingencies or absorb shocks to the economy. The silver lining is that there has been some improvement over time as the authorities reduced the fiscal deficit and because valuation gains through 2007 boosted financial assets (shares). Still, overall financial liabilities continue to be very high—over 100 percent of GDP—and should be reduced.

### B. Baseline Long-Run Macroeconomic and Fiscal Outlook

17. **Second, the forward-looking comprehensive public sector balance sheet is constructed with long-run projections of key economic variables and fiscal policy outcomes.** Fiscal results are connected with growth and overall economic health. Hence, a baseline macroeconomic scenario needs to be developed first, assuming that structural policies are held broadly constant, and reflecting mainly demographic developments and assumptions on labor participation.<sup>9</sup> Then, a fiscal scenario is projected based on the macroeconomic baseline and on current policies. Finally, the implied future net liabilities are derived from these fiscal projections. These projected new “future” liabilities (in net present value (NPV) terms) are then added to the existing traditional balance sheet to complete the intertemporal balance sheet. Let’s take the steps in turn.

#### The Baseline Long-run Macroeconomic Outlook

18. **The baseline long-run macroeconomic scenario is constructed with the following key elements (Table 2):**

- **Population** is projected to peak in 2017 at over 11 million, and then to decline gradually to just around 10 million by the late-2050s, as projected by the Greek authorities (Figure 1).

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<sup>8</sup> Christophe Kamps: “New Estimates of Government Net Capital Stocks for 22 OECD Countries 1960–2001” (IMF Working Paper No. 67, 2004).

<sup>9</sup> However, general technological progress is assumed to evolve as in other countries, so that Greece would tend to obtain long-run productivity growth more-or-less in line with partner countries.

**Table 2. Greece: A Baseline Long Run Macroeconomic Scenario**  
(Period average, unless otherwise indicated)

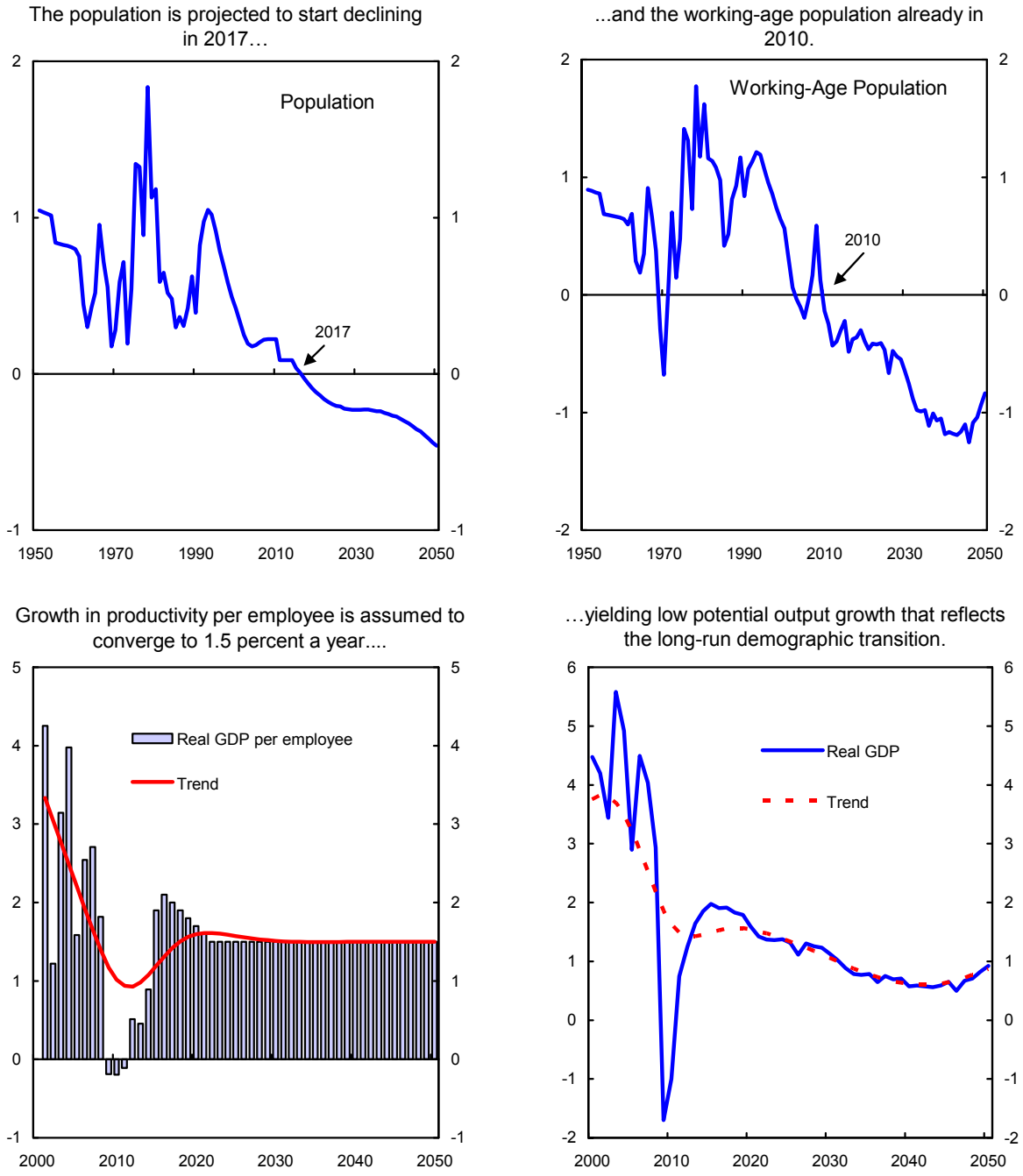
	1990-99	2000-09	2010-19	2020-29	2030-39	2040-49	2050-60
<b><u>Growth rates</u></b>							
Real GDP	2.1	3.4	1.4	1.3	0.8	0.6	1.1
Nominal GDP	12.6	6.7	3.4	3.4	2.8	2.6	3.1
Real GDP per capita	1.3	3.2	1.3	1.5	1.1	1.0	1.6
Real GDP per employee (prod)	1.7	2.3	1.1	1.5	1.5	1.5	1.5
GDP deflator	10.3	3.2	2.0	2.0	2.0	2.0	2.0
<b><u>Levels</u></b>							
Nominal GDP (€ billions)	83.4	198.8	290.2	412.3	557.1	725.0	965.2
<b><u>Population and labor market (1,000s)</u></b>							
Population growth	0.8	0.2	0.0	-0.2	-0.2	-0.3	-0.5
Working age persons 15-64 yrs	1.0	0.1	-0.3	-0.5	-0.9	-1.1	-0.6
Total dependency ratio	32.6	32.5	34.1	36.1	39.2	44.0	46.1
Labor force growth	1.2	0.8	0.2	-0.2	-0.7	-0.9	-0.4
Employment growth	0.6	1.1	0.3	-0.2	-0.7	-0.9	-0.4
Unemployment rate	9.3	9.5	9.0	8.5	8.5	8.5	8.5
Participation rate (LF/WAP) 1/	60.8	64.3	67.9	70.2	72.2	74.2	75.8
Population, persons	10,577	11,103	11,250	11,142	10,895	10,586	10,112
Working age 15-64 yrs	7,135	7,494	7,409	7,115	6,623	5,931	5,449
Dependents	3,442	3,609	3,841	4,027	4,272	4,655	4,663
Labor force, persons	4,338	4,815	5,028	4,992	4,779	4,398	4,129
Employment	3,931	4,359	4,574	4,567	4,373	4,024	3,778
Unemployment	406	456	454	424	406	374	351

Sources: Greek Statistical Institute; Eurostat; and Staff projections.

1/ WAP = Working Age Population; LF = Labor Force.

- **Working-age population** is projected to peak in 2010, before declining somewhat faster than overall population. The structure of the population thus gradually shifts to more dependents (especially elderly). The dependency rate increases over time, implying additional pressures on pensions, health, and other entitlements.
- **Labor force participation.** Of those in the working age population, more and more persons are assumed to participate in the labor process (i.e., women and youth participation is assumed to increase over time; prime-age males already participate at a high rate). If women and youth cannot be brought into the labor process in higher numbers, this would lower potential growth.
- **Unemployment.** The steady-state unemployment rate (NAIRU) is assumed to be 8.5 percent. This number reflects relatively limited labor market flexibility. Structural labor-market reforms could reduce the NAIRU, so there are policy options to increase potential growth from this angle. High labor force participation and a relatively high NAIRU, as assumed here, can occur if reservation wages are high. High reservation wages attract participation, but make (low productivity) workers difficult to employ.
- **Labor productivity.** Output growth per employee is assumed to gravitate to 1.5 percent a year, in line with partner countries having the same technology.

Figure 1. Greece: Demographics and Long Run Growth, 1950–2050  
(Year-on-year percent change)



Sources: Greece Statistical Office; and IMF staff calculations and projections.

- **Real GDP growth** is the result of the above assumptions and demographic projections. Based on these data, the current decade (the 2000s) is the high point for growth in Greece. Going forward, potential output growth is projected to slow with current structural policies and demographic trends, to a low of 0.6 percent in the 2040s (when aging is at the peak). Once the dependency ratio is past its peak, potential growth improves slightly again. The key insight, however, is that looking forward, Greek growth is likely to slow substantially, unless structural reform policies are strengthened to lean against the wind of demographic transition.
- **Inflation and nominal GDP growth.** Greece cannot sustain inflation above euro partners, so we assume that going forward the inflation rate settles at the ECB ceiling of 2.0 percent a year. Together with real GDP growth, this implies that in the next decade (2010s) nominal GDP growth is half its average of the 2000s. Nominal GDP developments provide the basis for the long-run current-policies fiscal projections.

### **The Baseline Long-run Fiscal Outlook**

19. **Next, the long-run fiscal position is projected based on this macroeconomic framework** (Table 3). To keep the exercise tractable, we again make some assumptions:

- **Cyclical adjustment:** In the 2000s, Greece has been in a cyclical boom, now turning into a downturn. Thus, for the current decade as a whole, revenues have been strong whereas cyclically sensitive entitlement spending and other outlays have been relatively low. This implies that the overall fiscal balance has been more favorable than the underlying structural fiscal balance. As shown in table 3 below, based on annual data and the WEO projection for 2009, we estimate that the average structural deficits in the 2000s are over 5 percent of GDP and that the average actual deficits are around 5 percent of GDP. In the next decade of the 2010s, this relative pattern is assumed to reverse as Greece is transitioning from a position above its potential output line to one below its potential output line. By the 2020s, the projections follow potential output as shown above, so that actual and structural fiscal balances coincide from then forward.
- **Revenue** is projected to increase in the near term as the authorities are making efforts to improve tax collections and because revenue efforts are in the pipeline. Once output growth settles at its long-run path, we assume revenue to GDP ratios to stabilize. To note, this assumption is optimistic because as the economy moves to its steady state growth path, the mix between domestic spending and net exports needs to change. Presently, domestic demand is too strong to be sustainable and the current account balance is too negative. As domestic demand eases and net exports improve, Greece will experience some downward pressure on taxes in relation to GDP because taxes on domestic demand are high whereas those on net exports are low.

**Table 3. Greece: A Baseline Long-Run Fiscal Scenario**  
(Period average, unless otherwise indicated)

	2000-09	2010-19	2020-29	2030-39	2040-49	2050-60
	(In percent of GDP)					
<b>General government</b>						
Revenue	39.5	40.6	40.7	40.7	40.7	40.7
Primary expenditure	39.7	43.5	46.8	51.8	55.8	57.7
Primary balance	-0.2	-2.9	-6.1	-11.0	-15.0	-17.0
Interest	4.8	5.8	7.6	10.6	16.0	26.1
Overall balance	-5.0	-8.7	-13.7	-21.7	-31.0	-43.1
Structural balance	-5.5	-8.4	-13.7	-21.7	-31.0	-43.1
Gross debt e.o.p.	108.8	153.0	230.3	368.2	561.9	794.8
	(In percent)					
Average nominal interest rate	4.8	4.5	4.3	3.8	3.6	4.1
Average real interest rate	1.6	2.6	2.3	1.8	1.6	2.1
<i>Memorandum items</i>						
Cumulative aging costs, percent of GDP 1/	0.4	2.4	6.8	11.8	15.0	15.9
Real GDP growth, percent	3.4	1.4	1.3	0.8	0.6	1.1
GDP deflator, percent change	3.2	2.0	2.0	2.0	2.0	2.0

Sources: Ministry of Finance; EU Aging Working Group; and Staff calculations.

1/ From 2007 onward.

- Primary expenditures** are broken up into two components: those related to every day economic activity, and those reflecting aging costs (pensions, health care, and other entitlements). The “regular” noninterest expenditures are assumed to evolve with GDP. The aging-related expenditures are increasing over time as projected by the Greek contribution to the EU 2009 Aging-Working-Group Report. In this Report, it is projected that Greek aging expenditures will increase by a cumulative 15.9 percent of GDP between 2007–2060. Taking revenue and noninterest (or primary) expenditures together, this implies that the primary fiscal balance is expected to deteriorate by similar very significant amounts by the end of the projection period. It is important to stress that this is a passive baseline projection—the authorities no doubt will take measures over time (to be defined) to address these large shortfalls. In this sense, baseline projections are not meant as a predictor of what will happen, but rather as a diagnostic device of the direction of things to happen if the authorities do not respond to evolving fiscal and structural pressures with police initiatives.
- Interest on the government debt.** To project the interest on the government debt, the calculations assume that the average real interest rate on the debt is 100 basis points higher than the real GDP growth rate. This is a working assumption from the growth



literature.<sup>10</sup> This real interest rate is then combined with the above assumption that Greek inflation will gravitate to the 2.0 percent objective of the ECB.

- **Debt.** It results that with the long-run growth assumption explained above, and the impact of aging on the fiscal balance, keeping all other policies as in the current baseline, the overall fiscal balance (the primary balance plus the growing interest bill over time) would trend to very large deficits—in turn generating a continuously increasing debt and debt/GDP ratio (Figure 2). The debt would thus be expected to rise to around 800 percent of GDP by 2060. These are not sound prospects and fiscal policies need to be tightened to forestall these serious debt pressures.

### C. The Comprehensive Public Sector Balance Sheet

20. **Finally, the comprehensive balance sheet is constructed using these baseline fiscal projections** (Table 4). This can be done by discounting the future stream of projected primary balances at the annual average interest rate on the debt. This net present value (NPV) of future primary balances indicates the implied accumulation of net assets or liabilities from current baseline policies and the effects of demographic transition. Adding the NPV of future primary balances to the existing accounting balance sheet yields the comprehensive net worth in the (current) base year. For 2007, the NPV of primary balances was derived for the period 2008–2057; for 2008, it was calculated for 2009–2058, etc... For each new base year, one can update the backward looking balance sheet by one year, and shift the forward-looking 50-year calculation one year into the future. In this manner, a continuously evolving image is obtained, centered on the current year, of the intertemporal public sector net worth.

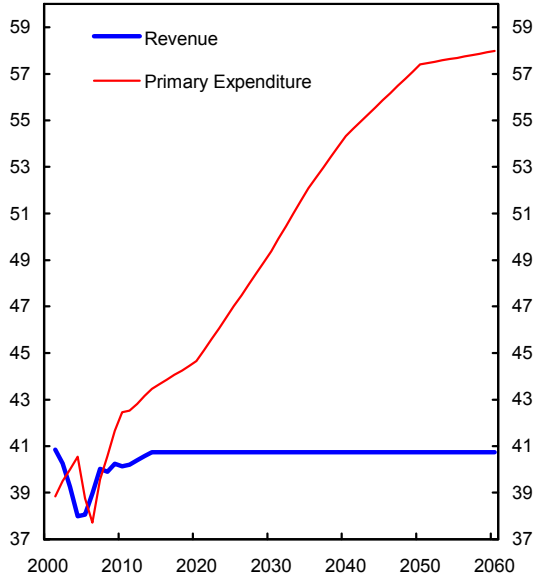
21. **The calculations for the comprehensive balance sheet over successive years can indicate whether policies are moving in the right direction.** If comprehensive net worth is improving over time, this suggests that policies are structurally strong enough to recover some of the shortfall or add to the surplus. If the comprehensive net worth deteriorates every year, then structural policies are too weak to absorb the effects of population aging in the future. Thus, to meet the challenge of aging, policies must be strong enough to service past debt, and they must also be able to offer perspective how to address the growing fiscal pressures from aging in the future. Either this implies an extra effort today to set up cushions for future aging costs, or that fiscal policies need to be progressively tightened as growing aging costs materialize over time.

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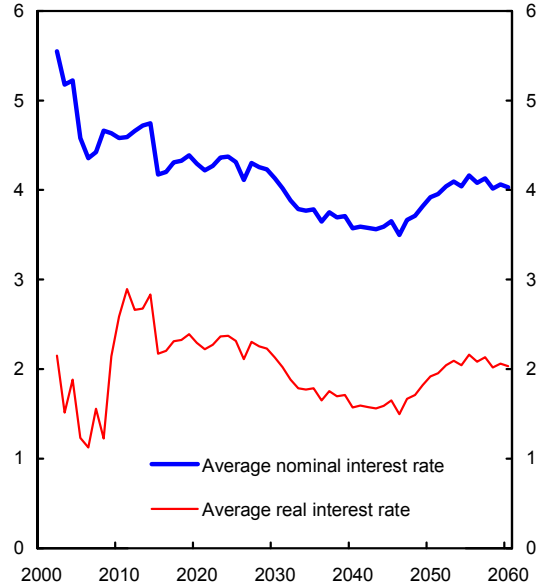
<sup>10</sup> The basis points spread can be different per country. For Greece, which has an above-average risk premium, we set the premium at the indicated 100 basis points.

Figure 2. Greece: Baseline Long-Run Fiscal Indicators, 2000–60  
(Percent of GDP)

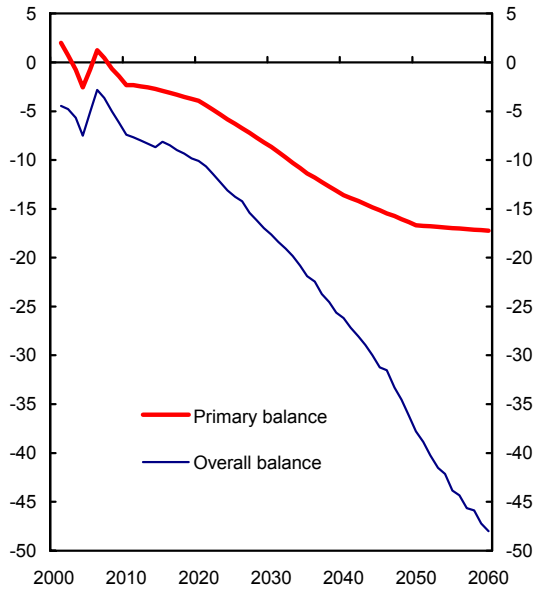
Primary expenditure growth reflects very high long-run aging costs.



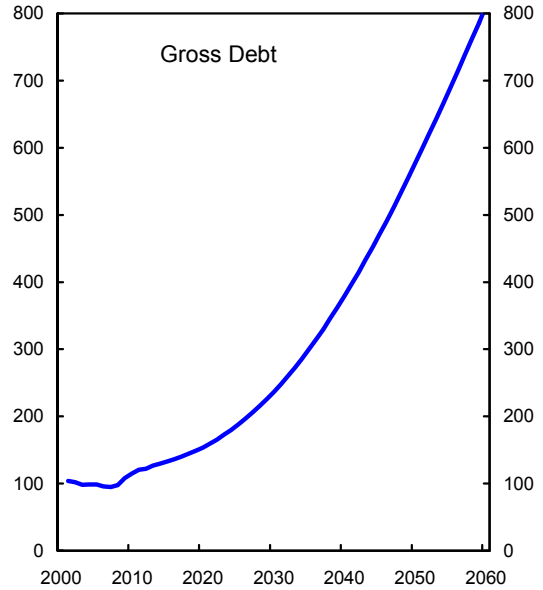
With inflation going to the 2 percent ECB target, nominal and real interest rates would be around 4 and 2 percent...



...this yields very large primary and overall fiscal deficits under current policies....



...resulting in unsustainable gross debt-GDP dynamics.



Sources: Ministry of Finance; and IMF staff calculations and projections.

**Table 4. Greece: A Comprehensive Public Sector Balance Sheet**

	2007	2008	2009	2010	2011	2012	2013	2014
	(Billions of euros)							
<b>Assets</b>	<b>192.5</b>	<b>196.0</b>	<b>205.6</b>	<b>208.0</b>	<b>212.5</b>	<b>214.4</b>	<b>221.9</b>	<b>226.0</b>
Financial assets	76.1	72.1	72.5	73.4	75.0	77.3	80.1	83.1
Net capital stock	116.4	123.9	124.6	126.1	129.0	133.0	137.7	142.9
Banking assistance package 1/	0.0	0.0	8.5	8.5	8.5	4.1	4.1	0.0
<b>Liabilities</b>	<b>235.4</b>	<b>249.2</b>	<b>273.1</b>	<b>292.0</b>	<b>312.5</b>	<b>330.4</b>	<b>354.6</b>	<b>376.7</b>
Financial liabilities 1/	235.4	249.2	273.1	292.0	312.5	330.4	354.6	376.7
<b>Traditional net worth (as in Table 1)</b>	<b>-42.9</b>	<b>-53.2</b>	<b>-67.5</b>	<b>-84.0</b>	<b>-100.0</b>	<b>-116.0</b>	<b>-132.7</b>	<b>-150.7</b>
NPV of future primary balances 2/	-843.3	-906.7	-972.1	-1039.5	-1111.4	-1187.5	-1268.1	-1345.5
<b>Comprehensive net worth</b>	<b>-886.2</b>	<b>-959.9</b>	<b>-1039.6</b>	<b>-1123.5</b>	<b>-1211.4</b>	<b>-1303.5</b>	<b>-1400.8</b>	<b>-1496.2</b>
	(Percent of GDP)							
Assets	84.4	80.7	84.2	84.1	84.0	82.2	82.2	80.7
Liabilities	103.2	102.6	111.8	118.1	123.5	126.7	131.3	134.4
Traditional net worth	-18.8	-21.9	-27.6	-34.0	-39.5	-44.5	-49.1	-53.8
NPV of future primary balances 2/	-369.6	-373.2	-398.0	-420.3	-439.3	-455.5	-469.6	-480.2
Comprehensive net worth	-388.4	-395.1	-425.7	-454.3	-478.8	-500.0	-518.7	-533.9
Memorandum items:								
Gross Maastricht debt (billions of euros)	216	237	266	288	309	328	352	375
Gross Maastricht debt (percent of GDP)	94.7	97.6	108.9	116.5	122.1	125.8	130.3	133.8
GDP (billions of euros)	228.2	242.9	244.2	247.3	253.0	260.7	270.1	280.2

Sources: Eurostat; and IMF staff calculations.

1/ When the government provides banks with financial assistance, it acquires a claim on banks and issues liabilities for the same amount. Thus, this financial assistance does not have a direct impact on net worth.

2/ Net present value of 50-year projected primary balances, discounted at the average nominal interest rate on the debt.

**22. For Greece, the comprehensive balance sheet suggests that net worth is negative and getting worse over time.** As indicated, we use the backward looking balance sheet (including its projections through 2014<sup>11</sup>), and then add the NPV of future primary balances for each successive base year to derive the comprehensive balance sheet.<sup>12</sup> The resulting comprehensive net worth deteriorates from negative 395 percent of GDP in 2008 to negative

<sup>11</sup> The backward looking net worth deteriorates in the projections because we do not assume valuation gains on securities holdings (as happened prior to 2008), while the deficit adds more debt to liabilities every year.

<sup>12</sup> The line “banking assistance package” of €8.5 billion reflects the liabilities the government issued to provide the banks with €4.1 billion in equity injections (preferred shares) and €4.4 billion in bonds for discount operations with the ECB. These operations do not affect net worth, because the government is issuing liabilities against counterpart claims on the banks (recorded as assets in the balance sheet). The second part of the banking assistance package (the bonds) has a duration of three years, so this amount is assumed to be repaid at the end of 2011. The equity part has a duration of five years, so this amount is assumed to be repaid at the end of 2013. (The authorities and Eurostat are discussing whether the bonds will be counted under the Maastricht definition of gross debt. In this note, we assume that they will.)

534 percent of GDP in 2014, mainly due to a rising NPV of future liabilities. Thus, in a broad sense, in 2008, the “debt” (better: net liability) is not around 98 percent of GDP, as is commonly understood under the Maastricht criterion (which is only backward looking), but closer to 395 percent of GDP—the comprehensive net worth—if we also take into account the implicit debt from current policies in the future.

#### **D. Conclusions and Policy Implications**

**23. The analysis suggests that current policies are not strong enough to deal with aging.** A few conclusions and policy implications may be explored:

- The traditional accounting net worth captures only a small portion of total net obligations facing the government. Current structural and fiscal policies have implications for future debts as well, and these implications should be taken into account when assessing prospects and policy space.
- The 2008 *accounting net worth* is negative 22 percent of GDP. The 2008 *intertemporal net worth* is negative 395 percent of GDP. This difference reflects high future aging costs to emerge into a structurally slowing economy. The comprehensive balance sheet provides an early warning system that policies need to be strengthened.
- Greece could face incremental difficulties in placing additional debt not because of the past debt, which has already been absorbed by the market, but because of the pressures from implicit future debt under current policies.
- Revenues need to increase and expenditures need to be cut; the political system needs to discuss with the public what is the proper balance for Greece between these two.
- Structural reforms that make the output and labor markets more efficient can lift the level of potential GDP (not the permanent growth rate but the level). A bigger economy makes it easier to absorb aging costs and improves the standard of living for all Greeks. Thus, structural reforms are essential.
- The government may want to update its estimates for the comprehensive balance sheet every year, perhaps in the budget document, to show the public whether comprehensive net worth is improving. As long as it is negative, the fundamental long-run budget constraint is not met and the country runs the risk of debt pressures.
- This relatively simple model allows for exercises (simulations) to see by how much primary fiscal measures could improve comprehensive net worth. For instance:
  - A 1.0 percent of GDP improvement in the primary balance sustained forever, i.e., a permanent or “structural” improvement, effective from 2010 onward could reduce the comprehensive net worth shortfall in 2009 by some 43 percent of GDP.

- As a corollary, to remove the negative comprehensive net worth from 2009 onward would require  $426/43=9.9$  percent of GDP in upfront but permanent primary adjustment effective as of 2010.<sup>13</sup> This is clearly impossible because it would be too large a shock for the economy, so adjustment of this magnitude needs to take place over several years.
- However, the longer the government waits to adjust the comprehensive net worth gap, the more difficult it gets, because the shortfall is projected to get deeper every year. If nothing is done now and, for instance, the country waits another five years to tackle its fiscal pressures, total measures needed to close the net worth gap in 2015 would be larger than 9.9 percent of GDP. Thus, Greece should not postpone corrective steps.

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<sup>13</sup> This calculation is too mechanical since it assumes that the economy can absorb such large adjustment all at once. In reality, the private sector needs time to adapt so that efforts need to be stretched out in time. This is one reason to start early and then take adjustment measures one step at a time. If a coherent plan is communicated to the public, confidence could improve and even assist in addressing the challenges. Credibility is key.

### III. STRUCTURAL REFORMS IN GREECE: LESSONS FROM OTHER COUNTRIES<sup>14</sup>

*It is often touted that times of crisis are best to implement bold reforms. Indeed, as international experience suggests, a number of countries embarked on ambitious reforms in times of crises. These reforms led to improved labor market outcomes and to subsequent rapid growth, even as they came with short-run cost. This note summarizes some lessons from international experience that could benefit Greece.*

#### A. Background

24. **Greece has experienced a loss of competitiveness.** The current account deficit has remained large in recent years, while the real exchange rate has steadily appreciated on account of higher inflation and unit labor cost increases exceeding those of trading partners. Various indicators point to a stagnant or declining market share and loss of price competitiveness. (Figure 1). Recent staff estimates of the equilibrium real exchange rate based on the CGER methodology suggest that Greece's real exchange rate is significantly overvalued relative to fundamentals (with estimates of its competitiveness gap between 20–30 percent).

25. **Labor markets are relatively weak** (Figure 2). The employment rate in Greece is low, in particular for females and youth, while unemployment duration is among the highest among peers. These outcomes are partly due to elevated minimum wages and tax wedges, and relatively high employment protection legislation (EPL).

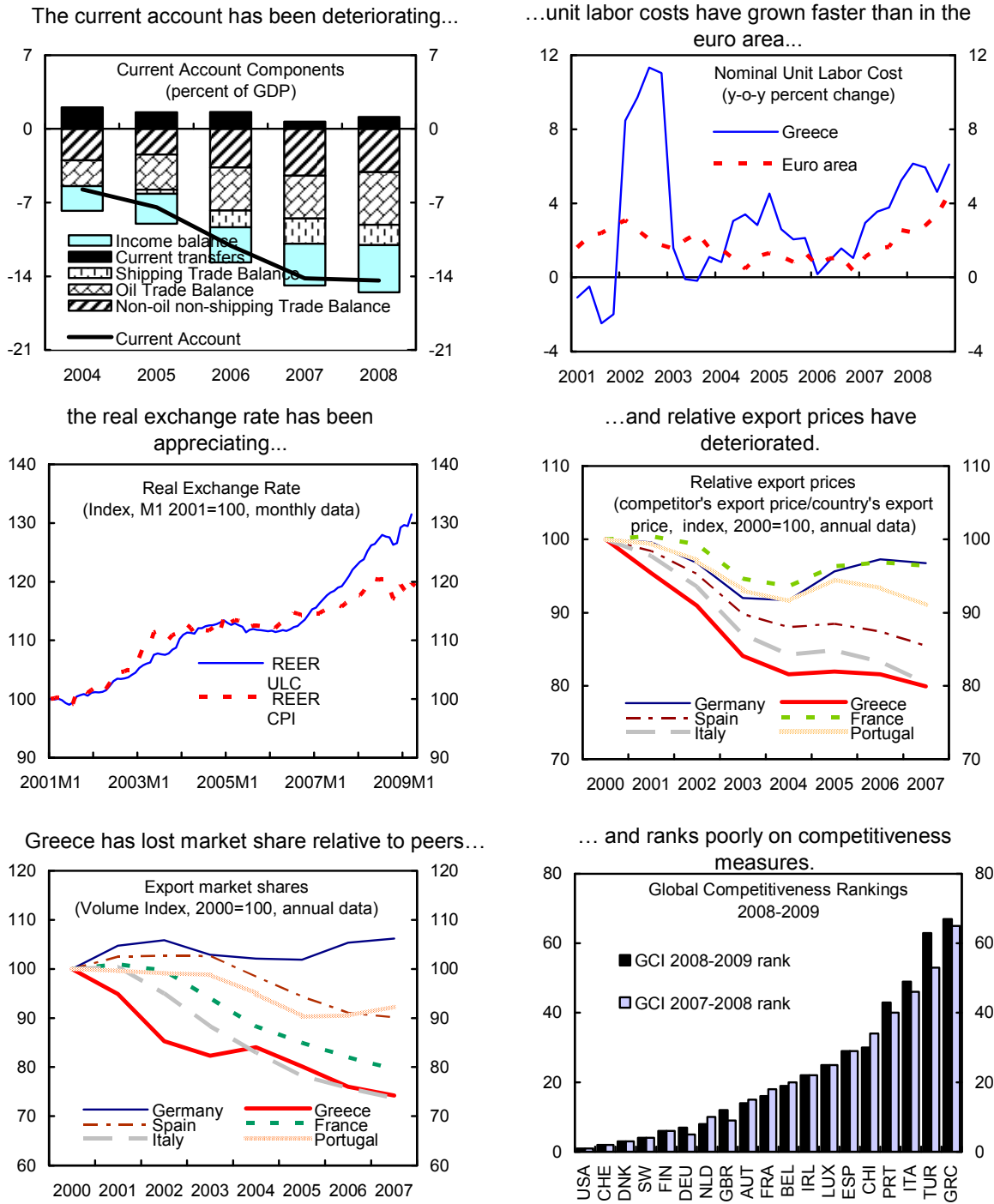
26. **Moreover, structural impediments hinder product market performance** (Figure 3). Among these are: a relatively restrictive business environment, including a high number of procedures and relatively high cost to start a business, high barriers to entry, especially in services, low ICT penetration, and insufficient internal competition due to high regulation and limited liberalization of utilities (vital since utilities serve as key inputs to the whole economy).<sup>15</sup>

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<sup>14</sup> Prepared by Delia Velculescu.

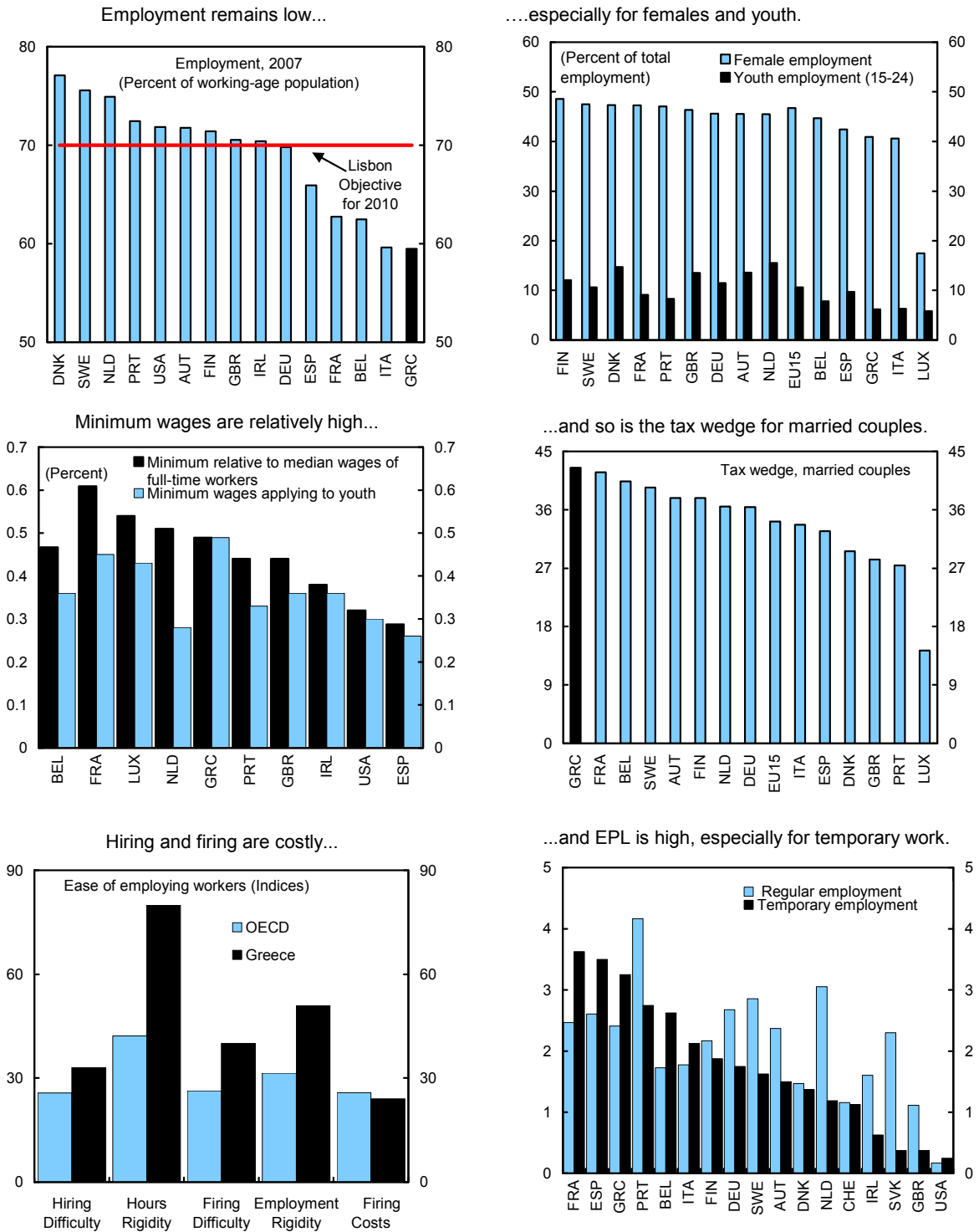
<sup>15</sup> It is also remarkable that the Greek economy is almost exclusively composed of small and medium enterprises, with very few large companies. A recent EU Commission report on SMEs in euro area countries suggests that these have a large role in increasing employment, even as they are less productive than large enterprises. The report points to the relatively weak performance of SMEs in South Europe, including Greece, where it notes the obstacles in administration, finance, and innovation compared to the EU average.

Figure 1. Greece: Competitiveness Indicators



Sources: ECB; WEO; World Economic Forum; IMF, BOP statistics; Eurostat; and Comtrade.

Figure 2. Greece: Labor Market Issues

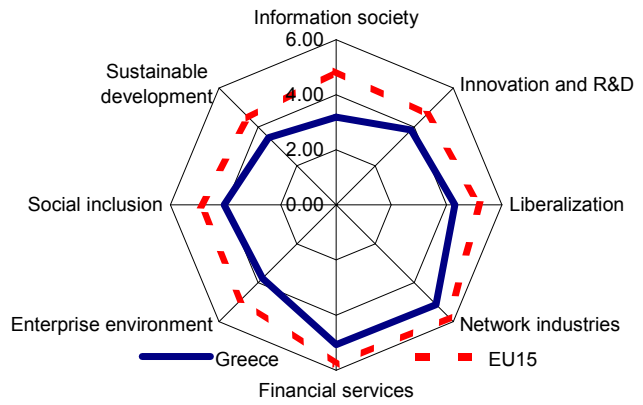
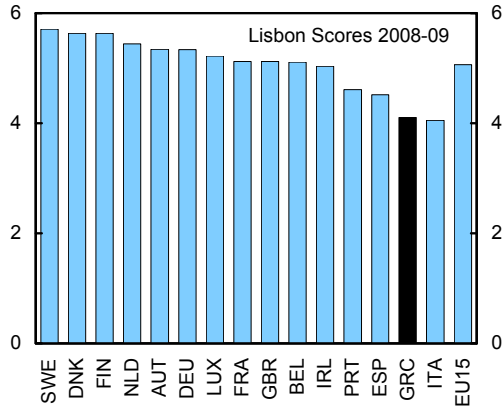


Sources: ECB; OECD; and World Bank.

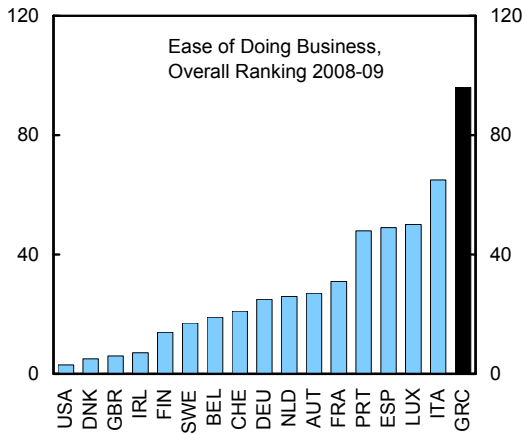


Figure 3. Greece: Product Market Performance

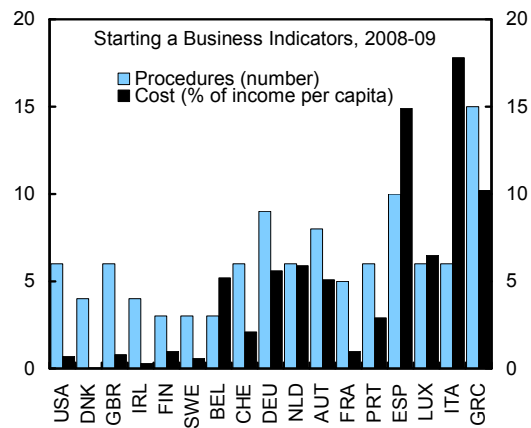
Greece is lagging behind on Lisbon objectives... especially on information society and enterprise environment



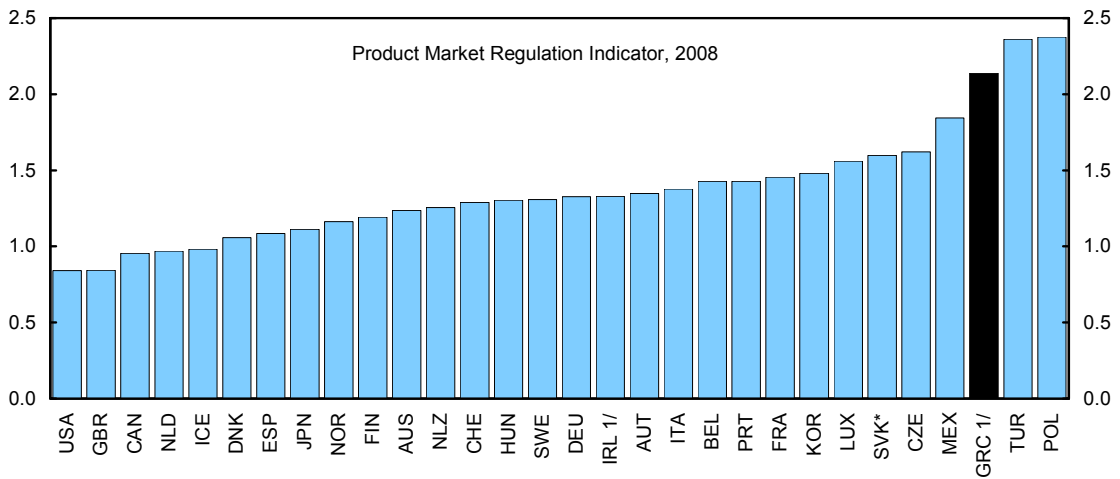
Doing business in Greece is difficult...



...due to bureaucracy and relatively high costs.



Greek product markets are some of the most heavily regulated in the OECD.



Sources: OECD; World Bank; World Economic Forum; and IMF staff estimates.  
1/ 2008 data are unavailable so 2003 data are used instead.

## B. Lessons from Other Countries

27. **Greece could benefit from the experience in other countries that have implemented structural reforms to boost competitiveness—learning from their mistakes and triumphs.** It is clear that, without the option of devaluation, Greece needs to reform product and labor markets to restore competitiveness and boost long-run growth. However, it may be less clear what would be the timing, details, sequencing, and requirements for such reforms to be successful. International experience offers a number of lessons on implementing structural reforms that could benefit Greece at this time.

- **Crises should be used as opportunities for reform.** As experience in several countries shows, periods of slow or negative growth are more conducive to product and labor market reforms (Box 1).<sup>16</sup> This appears to be the case for a number of countries, including Ireland, the Netherlands, Canada, New Zealand, and the U.K., which reformed during “difficult times,” when the perceived cost of the “status quo” appeared higher and hence the political will to reform became relatively stronger.<sup>17</sup> *Greece could, therefore, use the current crisis as an opportunity to address its structural problems and boost competitiveness and growth.*
- **Reforms need to be bold and are best implemented as a package.** To be successful, a mix of fiscal, labor and product market reforms that complement and reinforce each other appears best. For example, Canada embarked on tri-partite reforms in the mid-1990s that tackled both a large fiscal deficit and product and labor market impediments (Box 2). These led to an impressive fiscal turnaround and significant job creation and growth since the mid 1990s. Other examples of this type include the U.K., New Zealand, Ireland, and the Netherlands. In Australia, liberalizing product and labor markets simultaneously allowed labor supply reforms to translate into more jobs rather than higher rents, again contributing to strong subsequent productivity growth (Box 3).<sup>18</sup> *Greece should consider implementing broad-ranging reforms to address its structural problems and at the same time tackle the deteriorating fiscal situation and place debt on a sustainable downward path.*

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<sup>16</sup> See Rodrik (1996) and Drazen and Easterly (2001) on the role of crises in fostering reforms.

<sup>17</sup> Another incentive for reforms for a number of countries (such as Italy) was entry into the euro area.

<sup>18</sup> For theoretical discussion and evidence on the complementarities of structural reforms (including benefits from sequencing product and labor market reforms), see, among others, Blanchard and Giavazzi (2003), Blanchard (2005), Nicoletti and Scarpetta (2001), Annett (2007), and Bassanini and Duval (2006).

### **Box 1. United Kingdom: Difficult Macroeconomic Circumstances were Conducive to Reform**

The United Kingdom underwent sweeping structural reforms in the 1980s. The reforms were facilitated by difficult macroeconomic conditions and reform sequencing. First, the increasingly disappointing economic performance of the 1970s exposed the weakness in the existing economic structure, and its widely dispersed adverse effects created an environment that was conducive to far-reaching reforms. Second, although unemployment was high, other macroeconomic indicators such as growth and inflation began to improve in the early to mid-1980s, enabling the reforms to continue. Third, the rise in equity and home ownership resulting from the implemented privatization schemes created additional support for the reforms. The reform program included the following key elements:

- *Reducing the state's role in the economy* through privatization of state-owned enterprises and public housing, reduction in government size through cuts in civil service employment, and pension reform that reduced the relative value of state pension benefits and created incentives to enroll in private pension schemes.
- *Improving work incentives in benefit programs.* Net unemployment benefits were reduced by abolishing the earnings-related supplement, suspending their statutory indexation, and making their taxation less favorable. Eligibility criteria for receiving unemployment and other benefits were tightened. Job-seeking efforts were monitored via the 1986 “Restart program” which required six-monthly counseling for all unemployed.
- *Reforming the tax system.* The number of bands for marginal rates of personal income tax was reduced, while rates were lowered. Exemptions were reduced or eliminated, while the taxation of capital income was streamlined. The share of indirect taxes was increased, and corporate profit taxes were lowered while their base was broadened.
- *Reforming trade unions.* The government introduced a series of legislative reforms, including extending the grounds for refusing to join a union, introducing limits on picketing, prohibiting actions that force contracts with union employers, and weakening the closedshop and union immunities.
- *Liberalizing financial markets.* Administrative measures curbing bank lending and lending by building societies were removed, and pricing for financial services was liberalized.
- *Promoting entrepreneurship and self-employment.* The government introduced measures to foster self-employment, such as offering tax relief, facilitating bank borrowing for small companies, and establishing local agencies to counsel small businesses on planning, marketing, and design.

While the impact of the reforms on economic performance remains subject to debate, there is a broad consensus that the reforms contributed to halting the previous trend of relative decline in GDP levels per capita (e.g., Card and Freeman, 2002; and IMF, 2003), as the overall labor market and growth performance improved in the 1980s and the 1990s. Microeconomic evidence—examining the impact of specific reform efforts on firm-level productivity—also suggests that the structural reforms of the 1980s contributed to the United Kingdom’s improved relative productivity performance (Card and Freeman, 2002).

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1/ This Box is based on Ch. III of WEO, Apr. 2008, “Fostering Structural Reforms in Industrial Countries.”

### **Box 2. Canada: Reforms Need to be Comprehensive and Bold**

Facing debilitating economic conditions, Canada launched path-breaking fiscal and structural reforms in the mid-1990s. A key priority was to eliminate the federal government deficit of over 5 percentage points of GDP based on the following initiatives:

- *A retooling of the budget process* to incorporate a transparent budget forecasting framework, including a contingency reserve for debt reduction.
- *An expenditure review of all federal ministries* to refocus the role of the government and stress the cost effectiveness and efficiency of public services. A similar approach is guiding France's recently launched review of public policy.
- *An ambitious state reform* including notably a 20 percent cut in the federal civil service; a reduced presence of the government in the economy through selective privatization, and contracting out; and broad deregulation.

Steps to raise economic flexibility and competitiveness complemented the fiscal reforms. These included:

- reform of employment insurance and social assistance,
- pension reform,
- dismantling of trade barriers,
- deregulation of major network industries, and
- reduction of administrative burdens.

The fiscal turnaround after 1994 was remarkable. The federal government outperformed its fiscal targets every single year thereafter and achieved fiscal surplus in 1998, a year earlier than planned. Expenditure cuts allowed federal spending to fall from near 17 percent of GDP in 1994 to about 12 percent in 1998. With the improvement of the fiscal situation, the government enacted the largest tax cuts in Canadian history in 2000.

The improved policy framework created the conditions for sustained economic growth. Between 1997 and 2006, Canada enjoyed the highest job creation and output growth among G7 countries.

### Box 3. Australia: Reforms Reinforce Each Other <sup>1/</sup>

Australia has experienced strong productivity growth since 1990, with aggregate labor productivity increasing by about 30 percent during 1990–2006. Some of this performance has been attributed to successful labor and product market reforms:

**Labor market reforms:** In 1991, bargaining agreements on employment conditions were decentralized at the enterprise level so as to better align wages to productivity gains. The 1993 reforms expanded and accelerated the use of enterprise bargaining, and in 1996, the Coalition Government furthered the decentralization process by introducing the possibility of individual contracts through the Australian Workplace Agreements (the powers of the Australian Industrial Relations Commission were also reduced). These steps, together with other reforms and ongoing structural changes of industrialized economies around the world, contributed in the secular decline in the unionization rate. As a result of these consecutive reforms, Australia stands out among OECD countries as a country with a flexible labor market characterized by a low level of corporatism, a decentralized wage bargaining system, and a flexible employment protection legislation.

**Product market reforms:** Significant trade liberalization was initiated in the 1980s. Starting in 1988, phased reductions in tariffs were implemented across all industries, so that by the end of the 1990s virtually all tariffs have become negligible. Infrastructure reforms were also initiated in the late 1980s, covering deregulation and restructuring of air and coastal transport, and telecommunication. Public enterprises were also progressively commercialized, corporatized and privatized on a large scale. Between 1995 and 2000, the National Competition Policy (NCP) further reduced anti-competitive regulations, and reformed government businesses and the transport and utilities sectors.

Econometric evidence from the OECD suggests that product market reforms have a significant and positive impact on multifactor productivity (MFP), in particular in industries that use ICT capital goods more intensively. Moreover, labor market flexibility appears to be associated with faster productivity gains in industries that are more human-capital intensive. Finally, countries with more flexible labor markets have experienced a faster ICT capital deepening. These results suggest that, in the case of Australia, a combination of labor and product market reforms could have induced productivity gains of the order of magnitude of those observed in the 1990s. Finally, technological diffusion seems to crucially depend on domestic R&D intensity and human capital, even after controlling for product market and labor market policies, suggesting that a wide range of factors affect the diffusion of technology best practices across OECD countries.

<sup>1/</sup> This Box is based on Tressel, Thierry, 2009: “Does Technological Diffusion Explain Australia’s Productivity Performance?,” IMF Working Paper No. 08/4.

- **Social partners need to show resolve to put the country’s best interest first.** Structural reforms are difficult to implement due to resistance from well-organized special interest groups, making it hard for policymakers to protect the “public good.” Given the differing interests of unions, the government, and employer associations, labor market reforms are generally the most difficult to tackle. As experience in some Western European countries suggests, such as in Ireland and the Netherlands, coming to a common agreement was key, with labor unions and employers’ federations

offering wage restraint and working hour reductions, while the government reduced somewhat labor taxes and social security contributions (Box 4).<sup>19,20</sup> *Hence, in designing its reforms, the Greek authorities should include social partners and seek buy-in from all.*

- **There is no free lunch—reforms are difficult and costly in the short run.** As noted, structural reforms can have distributive effects that lead to costs for various groups. Uncertainty about the magnitude and impact of these effects complicates the decision process and policy design. By requiring cooperation among all social partners, reforms in Canada, Ireland and the Netherlands were designed to share costs between the private and public sectors. These countries implemented ambitious civil service reforms by directly restraining public sector employment and freezing public sector wages, together with pension reforms. At the same time, private sector wage moderation, together with cuts in minimum wages, led to lower social benefits (because benefits and wages are often connected). *The Greek government should therefore be prepared to call on social partners to contribute to the reform effort, while at the same time take tough decisions, including by reducing the public sector wage bill, implementing pension reforms, and improving budget processes and spending efficiency.*
- **The benefits of reforms take time to materialize.** While costs are incurred early, the benefits of reforms accrue over the medium and long run, as resources take time to be reallocated. Country experience, such as that of New Zealand, corroborate this conclusion (Box 5).<sup>21</sup> Empirical evidence from a panel of countries presented in the April 2004 IMF WEO also suggests that the cumulative gains from structural reforms in the trade, product and labor market areas are positive, but they predominantly materialize in the long run, while in the short term the estimated output responses are small or even negative. Time frames for strong reforms are measured by a decade, not by a few months or years. *Greece should be aware of and be realistic about the costs and long-run benefits of reform.*

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<sup>19</sup> Annett (2007) discusses and presents some empirical evidence that higher unionization rates are more conducive to labor and product market reforms. Countries such as Sweden, Denmark, Belgium, the Netherlands have traditionally less confrontational unions and a strong revealed preference for social dialogue and consensual decisions.

<sup>20</sup> The alternative would be to introduce measures aimed at directly reducing the powers of unions, as the U.K. did in the 1980s. This, however, could be more disruptive.

<sup>21</sup> The Dutch reforms of the early 1980s took ten years to fully come to fruition; Sweden entered a crisis in 1992/93 and took major reforms (especially in the fiscal area). It was not until a decade later that a new peak performance was reached. Germany began serious wage moderation in 1995, after the cost blowout with unification in 1991. German growth was flat for ten years, before the export machinery pulled the country out of its slump in 2005. Deep reforms appear to take a decade to mature.

#### **Box 4. Ireland and the Netherlands: Coordination Among Social Partners is Key <sup>1/</sup>**

In response to a macroeconomic deterioration in the early 1980s, sparked by adverse global supply shocks and abetted domestic policy mistakes, Ireland and the Netherlands embarked on comprehensive labor market reforms, coupled with fiscal restraint.

- **Wage moderation was facilitated by coordination among social partners.** At the core of the Dutch and Irish reform programs was a strategy to mitigate the effects of nominal wage growth with labor cuts. Labor unions and employers' federations traded wage restraint for working hour reductions, while the government committed to reduce labor taxes and social security contributions, especially for low-income workers which led to declines in the tax wedge (the Wassenaar agreements).
- **Fiscal adjustment and labor market reform went hand in hand.** Both countries recorded significant fiscal adjustment, even as the tax burden was falling. In Ireland, the stabilization program included a freeze on the public sector wage bill, which led to public employment falling by 10 percent over 2 years. In the Netherlands, the government wage bill was held down both by containing salaries and employments. Unions agreed to lower wages as a package with reductions in government wages and transfers and cuts in labor taxes, which in turn led to higher profitability, investment, employment, and growth.
- **Benefit reform was a key ingredient of the reform agenda.** Both governments reacted on all fronts: reducing benefit generosity, shortening their duration, and tightening eligibility requirements. The minimum wage fell, and so did social benefits linked to it.
- **Other labor and product market reforms were implemented at the same time.** Both countries also undertook reforms of their employment protection legislation and product market reforms. The Netherlands focused on streamlining layoff rules and relaxing hiring procedures, working time rules, overtime legislation, and regulations related to temporary work agencies (leading to the so-called "Polder Model" that strongly crowded in part-time work taken up by women, youths, and minorities—thus causing much higher participation rates). Ireland focused product market reforms on administrative simplification procedures and openness to trade and FDI.

<sup>1/</sup> This Box is based on Annett, Antony, 2008: "*What can Poland Learn from Other European Union Countries in Terms of labor Market Reforms?*," IMF Selected Issues Paper.

### **Box 5. New Zealand: Reforms Are Costly and Can Take a Long Time to Bear Fruit**

In the early 1980s, New Zealand faced high and variable inflation, rising public debt, growing unemployment, and mounting external pressures. A loss in international confidence in the economy in 1984 triggered a foreign exchange crisis. As a result, the government initiated a reorientation of macroeconomic policies and wide-ranging structural reforms which transformed its economy into one of the most open and market-oriented economies in the world.

#### **Reforms were sequenced and spanned a decade.**

- First, the authorities introduced policies that allowed the exchange rate to float, removed foreign exchange controls, and liberalized financial markets and international capital flows.
- These were followed by successive steps to remove distortions in and deregulate goods markets, to liberalize trade, and to implement an aggressive privatization program.
- Macroeconomic policies were also tightened: monetary policy shifted to containing inflation while fiscal policy was strengthened through budget and tax reforms and reforms of the accountability and incentive structures in all parts of the public sector.
- Labor market reforms followed in the early 1990s.

#### **While the reforms led to positive macroeconomic outcomes, they entailed short run costs.**

Inflation fell to low and stable levels, from about 8 percent in 1989 to 1½ percent by 1992, and low inflationary expectations gradually became entrenched. Fiscal consolidation took the public sector operating balance from a deficit of 7 percent of GDP in 1982/83 to 1 percent of GDP in 1992/93. At the same time, the growth performance of the economy in the immediate aftermath of the launch of reforms (1984–92) was disappointing—GDP per capita (on a PPP basis) grew by less than 1 percent and the unemployment rate rose from 6.2 percent in 1983 to more than 10 percent in 1992. After the period of intensive reforms, however, the economy’s growth performance improved significantly: New Zealand’s output growth rate between 1993 and 2002 was slightly higher than the OECD average. Real GDP grew at an average annual rate of 3.6 percent, compared with 1.6 percent during the reform period and 1.4 percent in the decade immediately preceding the initiation of reforms.

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1/ This Box is based on Chapter III of WEO, April , 2008: “*Fostering structural Reforms in Industrial Countries.*”

- **Nevertheless, well-designed reforms can pay off over time.** As all country examples presented in this note attest to, including the example of Austria (Box 6), comprehensive reforms lead to improved macroeconomic outcomes over time. In fact, it can be argued that some benefits of well-designed reforms could materialize sooner, through the immediate impact of financial markets on spreads and borrowing costs. A vast and growing literature suggests that policies and institutions significantly affect economic outcomes, with well-designed reform packages believed to yield lower unemployment and greater employment gains than “piece-meal”



reforms. Comprehensive structural reforms are likely to benefit Greece by lowering unemployment and boosting the employment rate and potential growth.

**Box 6. Austria: A Decade of Structural Reforms has Paid Off<sup>1/</sup>**

Over the last 5–10 years, Austrian growth was 0.6–0.3 percentage points higher than in the euro area, and 1.1–1.0 percentage points higher than in the main trading partner Germany. Unemployment has been remarkably low for European standards, despite immigration. Structural reforms have helped, together with wage moderation and an orientation towards fast-growing Eastern Europe. Competitive pressures from the East actually helped structural reforms in Austria (e.g., w.r.t. shop closing hours).

- **Labor market reforms**
  - Successful negotiations between Austria’s social partners, comprising labor and employer representatives have led to little wage drift at the local and firm levels, while productivity has been growing.
  - Reforms, including on working time flexibility and the severance payment system led to a relatively flexible labor market and a low unemployment rate.
  - Access to the labor market has been facilitated for skilled personnel from new EU member states.
  - Active labor market policies have been reformed to better fit individual or group specific needs.
  - Social security contributions were reduced.
- **Product market reforms**
  - Entry restrictions in some sectors have been lowered, notably in wholesale and retail trade.
  - One-stop-shop for starting businesses was established
  - Legal shop openings were extended.
  - Opening of gas and electricity markets.
  - An independent competition authority was established.
- **Other reforms**
  - Pension reforms: the 2003–04 reforms reduced the fiscal subsidization of early retirement (although some reforms were later relaxed). The statutory retirement age for civil servants was also raised.
  - Education reforms included: the introduction of government funding of higher-education institutions based on student enrollment; earmarking student fees to the universities in which students enroll; widening performance-related elements in university funding and in contracts for staff; introducing a formula-driven budgeting system to strengthen the financing and autonomy of universities.; increasing resources for vocational training measures.

<sup>1/</sup>This box was prepared based on work by Jens Clausen, desk economist for Austria.

### C. What's in it for Greece?

28. **The literature has attempted to identify those policies and institutions that could be most effective in boosting employment and growth.** Among the many studies addressing this topic is Bassanini and Duval (2006), which uses panel data for 21 OECD countries (including all country examples mentioned in this paper, but excluding Greece) over the 1982–2003 period and finds that lowering tax wedges and unemployment benefits and reducing PMR crucially affect the unemployment rate as well as overall employment. Other policy variables, including active labor market policies (ALMPs) and the level of centralization/coordination of wage bargaining are also shown to matter (and EPL, but to a lesser extent), especially in the context of interactions with other policies. Such interactions, especially between labor and product market reforms, are found important by others, such as Nicoletti and Scarpetta (2005).

29. **A wage bargaining model can be used to understand the effects of structural reforms on employment.** In the same vein as Bassanini and Duval (2006), Annett (2008) tries to gauge the effects of liberalization reforms on private employment using a simple wage bargaining analytical framework. In this framework, the “wage curve,” measuring the relationship between wages and employment rate, can shift downward as a result of various institutional and policy variables, including: (i) changing workers’ preferences in favor of employment over wages, as could happen if the wage bargaining system became more centralized; (ii) lower tax wedges that can lead workers to accept lower wages at a given employment rate; (iii) lower benefits (unemployment, but also disability and early retirement, including level, duration, and access) that can affect the reservation wage of workers; and (iv) lower government wages that also reduce reservation income.

30. **An econometric analysis helps quantify these effects.** Annett empirically estimates a theoretical equation relating annual changes in wage curve shift to changes in the above-mentioned policy variables using data for 14 countries (the EU-15 excluding Luxembourg and including Greece) between 1980–2006. The results largely confirm the theory (Appendix Table II 1). Next, Annett examines the transmission mechanism from wage curve shifts to actual private sector employment generation, which depends on the underlying flexibility in labor and product markets. An equation is estimated whereby the change in the ratio of private sector employment to working-age population is related to wage curve shifts, product market regulation, labor market regulation, and the interaction between wage curve shifts and these two regulatory indices. The interactive coefficients are both positive and significant, suggesting that the benefits of wage moderation are larger in countries with more liberal labor and product markets (Appendix Table II 2).

31. **Applying this model to Greece suggests that reform gains could be significant.** As a stylized illustration, applying Annett’s estimated coefficients to changes in key policy variables in Greece —using a 10 percentage point reduction in the tax wedge, 1 percent of GDP reduction in the government’s wage bill, and two standard deviation reductions in PMR

and in EPL, respectively—results in an increase of 3.2 percentage points in Greek private employment over 3 years. Were Greece to move toward best practices in each of these variables, the corresponding employment gains could be more significant (5–10 percent).<sup>22</sup> According to this exercise, lowering the government’s wage bill relative to GDP and the tax wedge appear to have the largest effects on employment, followed by improvements in product market regulation and employment protection legislation.

#### **D. A Menu of Options that Could be Considered**

**32. International experience points to a number of aspects to be considered in designing a successful structural reform strategy.** As regards the timing of reform, the current crisis provides a unique opportunity. On sequencing, there is evidence that product and labor market reforms are complementary, with initial implementation of product market reforms spurring more difficult labor market changes (as product market reforms erode rents and profit margins, incentives for workers to demand a share in those rents is weakened, lowering resistance to wage moderation and other labor reforms). Wage moderation appears particularly beneficial for small open economies such as Greece, where the corresponding initial decline in domestic demand can be compensated for by significant improvements in competitiveness and net exports. However, it is crucial that wage moderation and other labor market reforms (such as reductions in the tax wedge) be combined with (and financed by) fiscal reforms that lower current government spending and reduce benefits.

**A menu of specific options that could be considered in the case of Greece are as follows:**

##### **1. Labor market measures aimed at improving institutional frameworks and moderating wages:**

- achieve wage moderation, including through limiting the growth of minimum wages, in the context of a coordinated agreement from social partners that creates sufficient “buy-in” by the different vested interests;
- equalize at a lower level employment protection for both permanent and temporary contracts, by streamlining layoff rules, relaxing hiring procedures, lowering firing costs, and allowing for more flexible hours to facilitate higher employment rates for females, youth, and the elderly;
- investigate the effectiveness of Active Labor Market Policies and implement those that yield results.

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<sup>22</sup> Nicoletti et al (2001) find that the employment rate could increase by 1½ to 2 percentage points if Greece were to move toward the practices of the least restrictive countries. Badinger et. al. (2008) find that implementation of the EU Services directive could increase employment in Greece by 1.3 percent. Scarpetta and Tressel (2002) suggest that aligning the regulatory stance in Greece to that of the least regulated OECD countries could increase Greece’s long-term level of TFP relative to the technological frontier by more than 15 percent.

**2. *Product market measures aimed at eliminating restrictions and privatizing public enterprises:***

- reduce administrative burdens and simplify rules and procedures for new businesses;
- reduce barriers to entry, especially in the service sector (this has been shown to be associated with increased female employment) , including by fully implementing the EU Services Directive;
- privatize state-owned enterprises;
- deregulate and restructure transport, telecommunication, and utilities, including by unbundling operations (generation, transmission, and distribution) of electricity and reducing price restrictions and barriers to entry in the road freight sector;
- strengthen and increase powers of the Competition Authority.

**3. *Fiscal measures aimed at containing fiscal costs and achieving long-run sustainability:***

- reduce the government’s wage bill using public wage freezes/cuts and reductions in civil service (for example by winding down public entities created for specific purposes, such as those overseeing particular projects/reforms);
- reduce the tax wedge by lowering labor taxes and social security contribution rates, especially for low-income workers and reduce the “marriage penalty” to foster female employment (tax cuts should only be adopted in conjunction with lowering wages in the private sector and reductions in the government’s wage bill; its costs and benefits should be carefully weighed, especially given Greece’s significant tax evasion problems, and taking into account long-run fiscal sustainability);
- streamline budget processes and undertake expenditure reviews to improve the cost effectiveness and efficiency of public services;
- reform pensions to restore sustainability and reduce disincentives to work at older ages (this has been shown to be more effective if combined with reductions in EPL);
- increase transparency and disclosure, including by publishing monthly tax revenues data, monthly central government budget performance information, and quarterly financial statements of public enterprises.

### Appendix: Annett's Empirical Analysis and Results<sup>23</sup>

First, Annett estimates an equation relating annual changes in wage curve shifts—cyclically and productivity—adjusted real hourly wages in the private sector—to changes in key policy variables: the tax wedge on labor income—calculated as employees' and employers' social security contributions and personal income tax less transfer payments as percent of gross labor costs, averaged between single and married workers—benefit measures—incapacity related, unemployment, and early retirement benefits, the government wage bill, and the underlying negotiating stance—an average of the OECD's centralization and coordination indices. A panel model is estimated for 14 countries (the EU-15 excluding Luxembourg and including Greece) between 1980–2006, with and without fixed effects (Table II 1). Year dummies capture common excluded variables. To capture dynamics, the estimated equation includes a single lag on the dependent variable. Standard errors are asymptotically robust to both heteroskedasticity and serial correlation. The basic equation is also estimated using GMM techniques to address dynamic panel bias and deal with endogeneity issues.

Second, Annett examines the transmission mechanism from wage curve shifts to actual private sector employment generation (Table II 2). An equation is estimated whereby the change in the ratio of private sector employment to working-age population is related to wage curve shifts, an index of product market regulation, labor market regulation, and the interaction between wage curve shifts and these two regulatory indices. Once again, the equations are estimated using pooled OLS, fixed effects, First Difference GMM, and System GMM. And again, year dummies are included to capture common excluded variables. This time, three lags of the dependent variable are included in the equation to clean the residuals of autocorrelation. The time series is slightly shorter here, as EPLs are only measured from 1985. The same restrictions on the instruments in the GMM estimation are in place. In both GMM cases, the Sargan-Hansen test of overidentifying restrictions accepts the validity of the instruments, the Difference Sargan accepts the validity of the extra restrictions, and there is no evidence of autocorrelation.

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<sup>23</sup> For more details on the estimation and a discussion of the results, see Annett, Antony, 2008: "What can Poland Learn from Other European Union Countries in Terms of labor Market Reforms?," IMF Selected Issues Paper.

Table II.1: Estimating the Policy Determinants of Wage Moderation  
(Dependent variable: change in cyclically and productivity-adjusted real hourly wage)

	(1) Pooled OLS	(2) Fixed effects	(3) Fixed effects	(4) Fixed effects	(5) FD- GMM	(6) System- GMM
Lagged change in cyclically and productivity-adjusted real hourly wage	0.32*** (0.05)	0.28*** (0.06)	0.31*** (0.05)	0.27*** (0.07)	0.26*** (0.05)	0.29*** (0.04)
Change in tax wedge	0.32* (0.15)	0.28* (0.14)	0.24 (0.16)	0.25* (0.14)	0.20* (0.11)	0.22** (0.10)
Change in incapacity-related expenditure	1.67** (0.78)	1.81*** (0.81)	2.61** (1.08)	1.22 (0.74)	1.11* (0.66)	1.06* (0.61)
Change in government wage bill	2.40*** (0.65)	2.57*** (0.67)		2.15*** (0.64)	2.17*** (0.36)	2.45*** (0.32)
Change in relative government employment			0.81** (0.35)			
Change in real government wage rate			0.19* (0.09)			
Change in bargaining centralization/ coordination				-1.40** (0.69)	-1.32** (0.64)	-1.07* (0.61)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	295	295	291	273	260	273
R2	0.48	0.48	0.43	0.53	..	..
Sargan-Hansen test of overidentifying restrictions (p-value)	..	..	..	..	0.01	0.70
Test for first order autocorrelation (p-value)	..	..	..	..	-6.39	-5.45
Test of second order autocorrelation (p-value)	..	..	..	..	-2.07	-1.83
Difference Sargan (p-value)	..	..	..	..	..	1.00

Source: Staff calculations based on OECD data.

Note: Standard errors in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

Table II.2: Estimating the Effect of Wage Curve Shifts on Employment  
(Dependent variable: change in ratio of private sector employment to working age population)

	(1) Pooled OLS	(2) Fixed effects	(3) FD-GMM	(4) System-GMM
First lag of change in private sector employment	0.65*** (0.11)	0.56*** (0.10)	0.56*** (0.06)	0.59*** (0.04)
Second lag of change in private sector employment	-0.06 (0.10)	-0.07 (0.09)	-0.07 (0.07)	-0.07 (0.05)
Third lag of change in private sector employment	-0.07 (0.07)	-0.14* (0.07)	-0.14*** (0.06)	-0.13*** (0.04)
Change in cyclically and productivity-adjusted real hourly wage	-0.26*** (0.08)	-0.32*** (0.08)	-0.32*** (0.06)	-0.26*** (0.05)
Index of product market regulation	-0.005 (0.05)	0.17 (0.10)	0.17 (0.12)	0.07 (0.06)
Index of employment protection legislation	0.05 (0.06)	-0.05 (0.14)	-0.06 (0.16)	0.01 (0.06)
Change in cyclically and productivity-adjusted real hourly wage * Index of product market regulation	0.02 (0.02)	0.04* (0.02)	0.04*** (0.01)	0.02** (0.01)
Change in cyclically and productivity-adjusted real hourly wage * Index of Index of employment protection legislation	0.04** (0.02)	0.04** (0.01)	0.04** (0.02)	0.04*** (0.01)
Year dummies	Yes	Yes	Yes	Yes
N	266	266	252	266
R2	0.68	0.66	..	..
Sargan-Hansen test of overidentifying restrictions (p-value)	..	..	0.27	0.16
Test for first order autocorrelation	..	..	-11.63	-8.27
Test of second order autocorrelation	..	..	0.66	0.37
Difference Sargan (p-value)	..	..	..	0.20

Source: Staff calculations based on OECD data.

Note: Standard errors in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

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